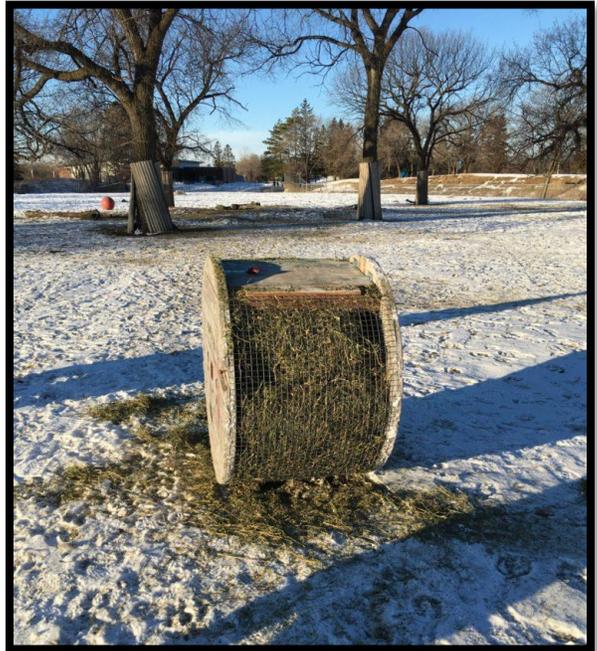


Rolling Hay Feeder Instructions

Adapted from instructions by Kyle Banton-Jones, Toronto Zoo, CA
Winner of Founder's Choice Award, Hose2Habitat Enrichment Contest 2019



General Description: This rolling hay feeder is built with a very large spool and wire mesh to create a device that is used by putting hay and other food items into the hatch at the top. Once the hatch is secured, the animal can push the hay feeder around, simulating a grazing behavior and spreading food throughout the enclosure. This rolling hay feeder is sturdy, durable, and simulates grazing behavior. Smaller spools can be used with this design for use with smaller animals.

Species: Any grazing animal, especially bison, elk, yak, camels and other ungulates.

Specific Safety Concerns:

- Ensure that horns, hooves, and other body parts do not become entrapped in the holes around the feeder. The holes should be an appropriate size to help ensure that entrapment does not occur.
- Check the feeder periodically for breaks or any holes in the wire.
- Ensure that the width-to-length ratio of the spool is such that the device will not be easily knocked over by the animal using it.
- Secure the trap door so that it stays closed while being rolled around.
- As always, check with your vets and others to be sure the enrichment you make is safe for the animals who will have access to it and suitable for the exhibit where it will be located.



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Materials (sizes given are those used in these instructions and may be adjusted accordingly for various size feeders)

1 5' x 4' wooden spool

Plywood

1 4"x4"

1 2"x4"

2 Hinges

1 Barrel bolt lock

1 lock

4"x4" Wire mesh (1"x1" pictured; larger holes may be optimal to allow animals to access all the hay)

Galvanized staple nails

Screws

Drill with Bits

Circular saw

Tape Measurer

Wire cutters

Hammer

Instructions

STEP 1. Make the trap door.

Measure the inside of the spool from wheel to wheel, (from the inside of one end to the inside of the other). Determine how long and wide you want the trap door to be. The outer dimensions cannot be wider than the wheel to wheel measurements of the spool. There is no set formula for the length, but 2/3 of the length is a ballpark. Ensure that it isn't so long that it keeps the spool from rolling.



Make the frame of the trap door from the 2x4 and 4x4 as seen in the picture by cutting (using the circular saw) so that the 4x4s are used for the the wheel to wheel width and the 2x4 is used for the length. Screw them together by putting 2 screws in each end of the 4"x4".



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STEP 2. Position the trap door frame inside the spool, ensuring that it is level and recessed enough to provide rolling clearance as shown in the picture. Sink 6-8 long screws in trap door frame on either side of the frame to secure it to the spool.



STEP 3. Attach the hinges, making sure to leave room for the hinges to swing and bolt to the door. Screw the backs of the hinges to the spool. Test the door a few times to ensure the hinges are secured and that the door opens and closes freely.

STEP 4. Next you have to do the least fun part of this build: cut a lot of wire. (Depending on the animal this will be used with, you may be able to use rope, fire hose, rubber hose, plastic mesh, or another material.) Measure the width of the spool and cut the wire until you have enough to wrap all the way around the spool. Then cut the wire so that it is the correct length on one side. Measure where the wire overhangs the 4"x4" on one side by about 3" and cut it to length. Only cut it to width on one side as it may stretch as you staple it later.



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STEP 5. Secure the wire to the 4"x4" on one end using a thin strip of plywood that is screwed down on top of the wire as shown in the picture. Cut the wire width-wise so it fits inside the spool NOT outside the spool. Slowly roll the spool over and attach the wire to the wood with staples so that the wire is tight and secure to the spool all the way around.



STEP 6. After one side is complete, repeat step 5 on the other side of the spool. Check to ensure that the trap door still has enough clearance to open and close easily. If it doesn't, back the pieces of plywood up a bit until it does. It should look similar to the pictures above.

STEP 7. Where the bolt on the barrel bolt meets the spool, drill a hole that will accept the bolt so it can be closed and the door remains shut.

STEP 8. Roll the spool around to ensure that there are no sharp edges created by the wire or the staples. If you find some, replace them or hammer them flat into the wood until they are smooth.

